A NEW BIBIONIDAE FROM CALIFORNIA[1]

(Diptera)

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One new species is on hand from the California Academy of Sciences collection which needs a name so that it might be included in my Bibionidae of California which is being published in the Bulletin of the California Insect Survey.

Bibio imparilis Hardy, new species

(figs. 1a–d)

This species fits rather closely to *B. townesi* Hardy but differs in many details. The hind femora, tibiae and basitarsi are not so slender, and the former two are not so long attenuated, compare figs. *1c* and *2c*. The male genitalia and the prothorax are entirely black, not predominantly yellow, and the genitalia are very different in development as shown in figs. *1a*. and *2a*. The antennae have only eight segments, counting the apical knob as two segments (fig. *1d*), not nine segments as in *townesi*. In both sexes, the costa extends distinctly beyond the apex of the radial sector, rather than extending at or near the apex. The coxae are brown to black, not yellow. The palpi are short with the segments not much longer than wide, rather than the palpi being elongate with the last two segments five or six times longer than wide. The females also differ by having the thorax and head predominantly black, not yellow.

Male.—Small, predominantly shining black species. *Head:* Antennae and palpi entirely dark brown to black, flagellum consisting of only five distinct segments, the large apical knob made up of two closely fused segments (fig. 1d). Palpi short, scarcely longer than lower division of compound eyes; apical segment slightly longer than wide; penultimate segment nearly two times longer than wide; second segment short, thick and flattened dorsally. Eyes rather densely covered with short, brown hairs; lower 2/5 of eye divided off into an area of smaller facets. *Thorax:* Shining black, except for the yellow humeral ridges and a faint tinge of rufous in ground color of the pleura and metanotum. Thoracic pile entirely yellow. Halteres dark brown, except for the yellow bases. *Legs:* Coxae and trochanters dark brown, remainder of legs yellow to rufous, except for last three segments of tarsi brown; apices of femora and tibiae tinged very lightly with brown. Front tibia shaped as in fig. 1b, inner spur short, scarcely one-quarter as long as outer. Hind femora and tibiae rather gradually tapered to bases, not strongly swollen apically. Hind tibia broader at apex

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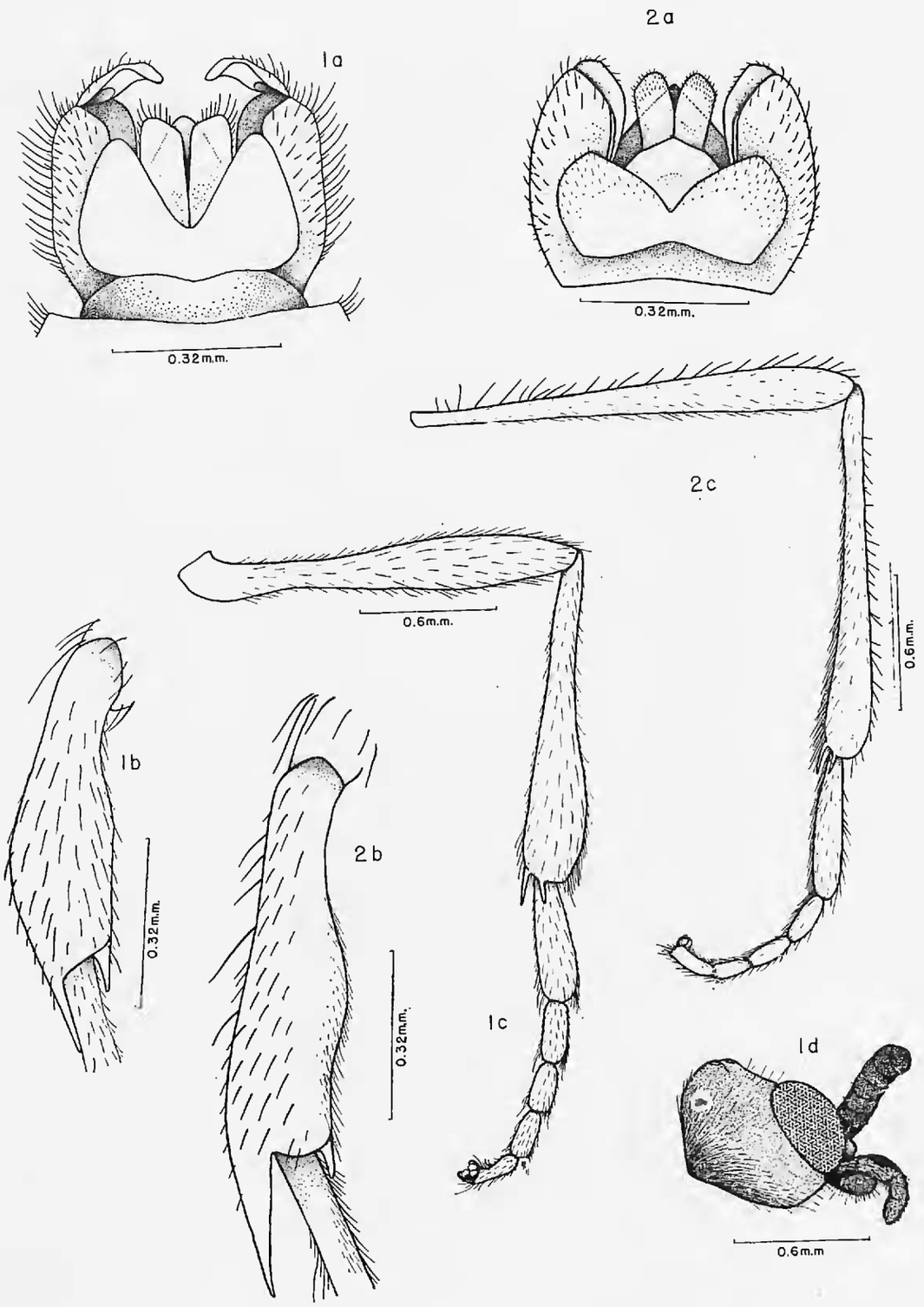
than the femur. Hind tarsal segments slightly swollen, basitarsus about three times longer than wide (fig. 1c). *Wings:* Faintly colored yellow-brown, anterior portion slightly darker. Costa extending distinctly beyond apex of radial sector; *rm* crossvein slightly longer than basal section of radial



Explanation of Figures

Fig. 1. *Bibio imparilis* Hardy. *a.* male genitalia, dorsal; *b.* front tibia; *c.* hind leg of male; *d.* head of female. Fig. 2. *Bibio townesi* Hardy. *a.* male genitalia, dorsal; *b.* front tibia; *c.* hind leg of male.

sector; posterior veins yellow-brown, distinctly darker than wing membrane; *m* crossvein and basal portion of vein M_{1+2} beyond the crossvein are very faint, almost obliterated. *Abdomen:* Entirely black, covered with yellow pile. Ninth tergum with a deep U-shaped cleft on hind margin, extending two-thirds the length of the segment (fig. 1a). Ninth sternum cleft on hind margin about one-half its length. Claspers simple, moderately slender and subacute at apices.

Length: Body, 4.5 mm.; wings, 5 mm.

Female.—Fitting the description of the male in most respects. Coxae tinged with rufous, humeral ridges and hind portions of propleura yellow. From a dorsal view, head nearly quadrate in shape. Front about equal to width of one eye, portion of head behind compound eyes about equal to length of one eye (fig. 1d). Hind tibiae not swollen at apices, tarsal segments slender. Abdomen dark brown, tinged with red; cerci yellow, tinged lightly with brown.

Length: Body, 4.75 mm.; wings, 5.5 mm.

Holotype male, allotype female and three paratypes, all males, from YOSEMITE VALLEY, MARIPOSA COUNTY, CALIFORNIA, May 21, 1921 (E. C. Van Dyke). Holotype, allotype, and one paratype in the California Academy of Sciences collection. One paratype each in the United States National Museum and the University of Hawaii.

LABORATORY MANUAL FOR INTRODUCTORY ENTOMOLOGY by Clifford J. Dennis. Wm. C. Brown Company, Dubuque, Iowa. Loose-leaf spiral binding. Price $2.00.

Dr. Dennis, who is Associate Professor of Biology at East Central State College, Ada, Oklahoma, has presented a brief and simple manual covering subdivisions of Entomology. The work opens with a chapter on collecting and techniques, followed by chapters on a comparison between insects and other arthropods, external anatomy, mouthparts, antennae, legs, wings and internal anatomy. Life cycles, insect groups, ecology and insect control make up the remaining chapters. There are two short appendices, dealing with materials and collection arrangements.

Techniques and structure are covered adequately for a course of these dimensions. I cannot help but feel that the other areas have been short-changed a bit. Of special note is the short shrift given basic systematics and nomenclature, early stages, behavior and the various practical disciplines to which entomology can be a valuable adjunct.

Strong points are the well-thought-out syllabus-like arrangement of the chapters, and the omission of unnecessary details, often left to clutter up a general course.

The manual seems to supply an adequate and reasonably priced guide to an introductory course in the subject, but would not be advisable for a more extended or technical approach.— J. W. TILDEN, *San Jose State College, San Jose, California.*